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ABSTRACT

The purpose of this study was to conduct trend and predictive analyses using both the National Center for Education Statistics (NCES) Fall Staff Survey and Equal Employment Opportunity Commission (EEOC) data to examine changes in the proportional representation of women by race/ethnicity among higher education administrators from 1991 to 1997. Specifically, it sought to explore the progress of gender equity for women administrators in higher education by examining whether the increases for women by race/ethnicity have been comparable across various institutional characteristics and to determine the relative impact of these characteristics on the change in the proportional representation of these women. Analysis of the data indicated that the proportional representation of women administrators in five racial/ethnic groups increased between 1991 and 1997. White women experienced by far the largest increase in proportional representation, followed by considerably smaller increases for Black, Hispanic, Asian American, and American Indian women administrators, respectively. In addition, the change in the proportional representation of women administrators by race/ethnicity varied by institutional type, with some types showing much greater increases than others, and other types showing decreases. Women administrators of color continue to be disproportionately underrepresented at most every institutional type except minority-serving institutions. Specifically, the trend analyses suggested that increases for Black and Hispanic women administrators have occurred primarily at institutions that serve their respective underrepresented group. Institutions that had more women administrators of color were minority-serving, two-year, urban, or had high percentages of women faculty of color. (Contains 45 references.) (EV)

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Promoting Equity for Women Administrators of Color

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Promoting Equity for Women Administrators of Color

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Women's under representation in higher education leadership has been a focus of study since Title IX brought the issue of gender to the forefront of higher education in 1972. During the nearly three decades following the enactment of this ground-breaking legislation, the number of male administrators in higher education increased by 10%, while the number of women administrators increased by 147% (National Education Association, 1998). Although the gap between the number of male and female administrators in higher education has narrowed considerably, a 19.4% percentage point gap remained between women and men administrators in 1995 (Roey, Rak, Fernandez, & Barbett, 1998).

Women administrators from all racial/ethnic groups[1] have experienced growth in their numbers. For example, the number of Hispanic women administrators in public institutions increased over 100% between 1983 and 1991 (Rai & Critzer, 2000). However, while the number of Black, American Indian, Asian American, and Hispanic women administrators more than doubled from 1981 to 1991, their proportional representation only increased from 4% to 6% (Ottinger & Sikula, 1993). Hispanic women administrators represented only 1.1% of all administrators in public institutions in 1991 (Rai & Critzer, 2000).

The existing disparities raise interesting questions about the status of women administrators in higher education. What changes have occurred in the proportional representation of women administrators by race/ethnicity and, specifically, have those changes occurred differentially among institutional types? Has the "chilly campus climate," a conceptual backbone of the gender equity literature, thawed for women administrators of all races and ethnicities? Have women, as they have achieved gatekeeper roles as college chief executive officers (CEOs), succeeded in removing barriers to the administrative ranks for women of all races and

[1] The National Center for Education Statistics classifies its racial/ethnic groups as: White, non-Hispanic; Black, non-Hispanic; Asian or Pacific Islander; Hispanic, and American Indian or Alaskan Native. For ease and consistency in reporting, we use the following shortened versions of these classifications: American Indian, Asian American, Black, Hispanic, and White.

ethnicities? Can we predict which institutional types, if any, are influential in increasing the representation of women administrators of color and use those predictions to guide future policy and practice?

The concepts represented in the questions above guided the development of this study of national trends in the proportional representation of women administrators by race/ethnicity in postsecondary institutions by institutional types and the impact of selected institutional characteristics on the change in that proportional representation. Learning about the representational differences among racial/ethnic groups between types of institutions and the predictive influence of selected institutional characteristics may help in the identification of factors that can lead to increases in the number of women administrators of all races and ethnicities. Setting the findings within the framework of women's gatekeeping status in senior-level positions and supportive campus climates may help determine where institutions of higher education need to focus their efforts in the continued promotion of gender equity.

The Status of Women Administrators in Higher Education

Our understanding of women's status in higher education administration comes from several sources such as national databases, information on select populations of women administrators, and national and single institution surveys. The data available from all of these sources indicate that the gap between the number of male and female administrators in higher education is narrowing. Published data from the 1995 Fall Staff Survey conducted by the National Center for Education Statistics (NCES) showed that women held nearly 44% of full-time higher education executive, administrative, and managerial positions. Women's proportional representation within this administrative category was up over 3 percentage points from 1991, and almost 18 percentage points from their 1976 proportional representation of 26% (Roey et al., 1998). The change in the proportional representation of specific racial/ethnic groups is not available, however, because prior to the 1993 Fall Staff Survey, race/ethnicity information on administrators was not gathered by the NCES.

The literature on the status of women in higher education administration frequently references the American Council on Education's Office of Women in Higher Education (OWHE) reports on women presidents as a barometer for gauging gender equity among administrators in

postsecondary institutions. Begun in 1975, the OWHE has compiled data on the number of women chief executive officers, as well as information about their career paths, educational and professional backgrounds, perceptions on women's and minorities' issues, and personal demographics. A 1993 report from OWHE (Touchton, Shavlik, & Davis) indicated that between 1975 and 1984, the number of women CEOs at accredited colleges and universities nearly doubled, jumping from 148 to 286. In 1995, the OWHE (Touchton & Ingram) reported that women CEOs led 453 postsecondary institutions (16%). The racial/ethnic composition of these women was comprised of 7 American Indians (2%), 2 Asian Americans (less than 1%), 39 Blacks (9%), 24 Hispanics (5%), and 381 Whites (84%). A closer look at these women presidents is provided in a 1995 survey of American college presidents conducted for ACE by Ross and Green (1998). Their findings showed that 25% of Black presidents were women, and that 84% of these women led public institutions. Only 14% of Black presidents at historically Black colleges and universities (HBCUs) were women. The study also showed that nearly all Hispanic women presidents led public 2-year colleges, of which half were Hispanic-Serving Institutions (HSIs).

Other sources provided information about the status of women administrators through studies of specific administrative positions or in specific institutional contexts. Doyle Walton (1998), for instance, found that of 1,711 responding Chief Academic Officers (CAOs) at regionally-accredited colleges and universities in 1991, 16% were women, only slightly more than the number of women presidents reported in 1992 by the OWHE. She did not provide data on the racial/ethnic composition of these women. Similar data are available on Chief Student Affairs Officers (CSAOs) through the College and University Personnel Association's annual Administrative Compensation Survey. The 1992-93 survey results showed that 28% of the sampled CSAOs were women, a proportional representation that historically has been greater than that of other senior-level administrative positions such as president or CAO (Creal & Beyer, 1993). A survey of women CSAOs in 1992 showed that 88.8% were White, 5.6% were Black, 2.5% were Hispanic, and 1.9% were Asian American (Randall, Daugherty, & Globetti, 1995). These representations were similar to those of white women presidents, less than Black women presidents, and greater than Hispanic and Asian American women presidents reported by the OWHE in 1992.

The Climate for Women Administrators in Higher Education

The narrowing of the gender gap may be due, in part, to the attention that was drawn to the barriers women faced in attaining a position or advancing in higher education administration. Much of the early literature in this area suggested that the low representation of women in administration was due to personal factors such as low self-confidence, geographical limitations, and inadequate credentials (Mann & Smith, 1990). Several publications, beginning in the 1980s, challenged those perspectives on access and representation, providing us instead with an understanding of organizational and cultural factors that created a "chilly campus climate" for women. Bernice Sandler and Roberta Hall, through the Association of American Colleges' Project on the Status of Education of Women, co-authored a series of papers on the chilly campus climate for women (see, for example, Hall & Sandler, 1982; Hall & Sandler, 1984; Sandler & Hall, 1986; Sandler, Silverberg, & Hall, 1996).

In 1988, Shavlik, Touchton, and Pearson, through the ACE Commission on Women in Higher Education and the Office of Women, published a special report entitled the New Agenda of Women for Higher Education that addressed the need to correct hiring inequities and provide supportive campus environments for women. Shavlik and Touchton revisited the Agenda in 1992, pointing out that the goals had not changed, but that more progress was needed. They noted that 53% of all students were women, yet only 12% of all CEOs of the institutions in which these students studied were women. Defining campus climate as "those aspects of institutional atmosphere and environment that foster or impede women's personal, academic, and professional development" (p. 49), they suggested that the issues raised by Sandler and Hall in 1986 regarding behaviors, attitudes, policies, and practices, had yet to be adequately addressed. As a result, women administrators continued to be treated differently because of gender.

The 1990s saw a continuation of the literature on campus climate and institutional context (see, for example, Chliwniak, 1997; Svoboda & Crockett, 1996) and a focus on issues of diversity. While gender continues to be a major focus on diversity studies, attention is shifting to understanding gender in the context of specific racial/ethnic groups (see, for example, Gorena, 1996; Warner, 1995) and specific institutional characteristics.

Some institutional environments historically have been more welcoming of women administrators than others. Two-year institutions consistently have shown the largest

proportional representation of women CEOs over the past 25 years (Touchton & Ingram, 1995). These institutions, along with women's colleges and minority-serving institutions such as historically Black colleges and universities (HBCUs), share a commitment to providing access and successful educational experiences to students who may otherwise not be served (DiCroce, 1995; Harwarth, Maline, & DeBra, 1997; Harvey & Williams, 1996). Institutions committed to inclusivity may tend to create norms, policies, and practice that respect and support a climate affirming of diversity not only for students, but for faculty and administrators as well.

The literature on the status of women administrators and on campus climate has been inconsistent in its reporting of data on women of color and on integrating gender and race/ethnicity in the discussion of equity. Felicinne Ramey (1995) for example, lamented the lack of research on Black women administrators noting that it may be due to the small number of these women holding leadership positions in higher education administration. In addition, attention to specific racial ethnic groups and specific institutional characteristics has not found its way consistently into the analyses of national data sets. The lack of comprehensive research or complete databases on women administrators of color in higher education is disturbing, and limits our ability to understand fully the status of all women administrators in higher education.

The CEOs of institutions play a central role in shaping the norms, policies, and practices that help create or ameliorate the chilly climate for women administrators (Chliwniak, 1997). Some argue that when women enter these gatekeeper positions, they influence the structures and norms that create barriers to the achievement of women in administration (Chliwniak, 1997), opening doors to the hiring of more women administrators. A recent study of IPEDS data showed that institutions with women CEOs have experienced significant increases in their proportional representation of women administrators (Poplin Gosetti & Opp, 2000). However, "a significant body of literature tends to support the idea that problems related to the inclusion of women in upper-level administrative work is more than simply a matter of hiring additional women' (Tedrow & Rhoads, 1998, p. 5).

The positive effect that hiring a critical mass of women would have on the development of a climate supportive of continued growth in the numbers of women administrators, was addressed by Rosabeth Moss Kanter in 1977. According to Kanter, once an organization achieved a critical mass of women at entry and mid-level positions, the climate regarding the hiring and promotion

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of women to senior-level positions would become more equitable. Research by Robin Ely (1994), however, refuted Kanter's notion of a critical mass, noting that to change women's token status, a critical mass of women must exist at the senior administrative level. These conflicting viewpoints may be addressed by examining the connections between the presence of women in climate-changing, administrative roles and the representation of women administrators in post-secondary institutions. The conflict also may be addressed by examining the critical mass of women faculty, a professional group not found in the organizational worlds of management studied by Kanter and Ely. If women in senior leadership positions are successfully creating more welcoming campus climates, we might expect to see more women administrators in institutions that are led by women CEOs or where women faculty are found in the greatest numbers. We also might expect to see the presence of these women as a predictor of positive change in the proportional representation of women administrators.

Purpose of the Study

Despite the impressive increase in the number and percentage of women administrators reported by the National Education Association (NEA) and the NCES, our understanding of this progress may be incomplete. First, government-reporting agencies minimally disaggregate their data. Although they disaggregate the data by the institutional characteristics of level and control, a further disaggregation by the characteristics of size, locale, sex, and race, might provide a greater understanding of group complexities that cannot be understood without such disaggregation (Clark, 1987). Second, government-reporting agencies provide descriptive data only (e.g., numbers, percentages, and changes in percentages). Descriptive data do not show the relative impact that different institutional characteristics have on changes in the number and percentage of women administrators.

The purpose of this study, therefore, was to conduct trend and predictive analyses using both NCES Fall Staff Survey, and Equal Employment Opportunity Commission (EEOC) data to examine changes in the proportional representation of women by race/ethnicity among higher education administrators from 1991 to 1997. Specifically, we sought to explore the progress of gender equity for women administrators in higher education by examining whether the increases for women by race/ethnicity have been comparable across various institutional characteristics

and to determine the relative impact of these characteristics on the change in the proportional representation of these women. The following research questions guided this study:

1. What is the trend in the proportional representation of women by race/ethnicity among higher education administrators from 1991-1997?

2. What is the trend in the proportional representation of women administrators by race ethnicity, by selected institutional characteristics (e.g. level, control, size, locale, race, and sex)?

3. What is the impact of selected institutional characteristics (e.g., level, control, size, locale, race, sex, women presidents, and percentage of women faculty of color) on the change in the proportional representation of women administrators of color?

Methodology

The Data Set

The data used for the analyses were obtained from data files available on the NCES Integrated Postsecondary Education Data System (IPEDS) web site (http://www.nces.ed.gov/Ipeds/data.html). These data included the Fall Staff Survey conducted by the NCES in 1997, and the EEO-6 Survey conducted by the EEOC in 1991. The 1991 NCES Fall Staff Survey gathered data from all postsecondary institutions with less than 15 staff members but did not include any staff information broken down by race/ethnicity. Therefore, we used the 1991 EEO-6 Survey, which gathered data from institutions with 15 or more full-time staff members, broken down by race ethnicity. The NCES Fall Staff Survey is one of the surveys that comprise the IPEDS, a collection of eight different surveys conducted on a regular basis to gather comprehensive institutional-level information on the system of postsecondary education providers. The Fall Staff Surveys, with institutional response rates in the 1990s consistently at 85% or above, are the most comprehensive source of information on trends in the numbers of administrators in postsecondary institutions. Data for those institutions that do not respond in any given survey year are imputed using procedures developed by researchers at the NCES.

The Sample

The universe of institutions for which the NCES collects Fall Staff Survey data includes all 4-year, 2-year, and less-than-2-year postsecondary institutions. Our sample was limited to 2- and 4-year institutions categorized by the 1994 Carnegie Classification of Higher Education Institutions (Carnegie Foundation for the Advancement of Teaching)[2]. This classification system categorizes all regionally accredited, degree-granting colleges and universities in the United States. By eliminating institutions not categorized by the Carnegie classification system, the IPEDS universe was reduced to 2,813 institutions.

Analysis of administrator data in the aggregate, rather than analysis of administrator data by institution, can lead to underestimation of gender segregation (Kulis, 1997). In order to portray most accurately the status of women administrators in higher education, our sample was limited further to those Carnegie institutions that reported Fall Staff Survey or EEO-6 data by race/ethnicity in both survey years. This left a sample of 2,292 matched institutions for which we had data, eliminating 18.5% of the Carnegie-classified institutions.

Institutional types represented least well in our sample of matched institutions were small-size institutions (24.9% missing), 2-year colleges (27.0% missing), private institutions (27.3% missing), HBCUs (20.0% missing), and tribal colleges (66.7% missing) (see Table 1). The under representation of these types of institutions in the sample may have biased the trends in their proportional representation of women administrators. Therefore, one needs to exercise caution in describing changes in the proportional representation of women administrators at these particular types of institutions.

Dependent Variable

The 1997 NCES Fall Staff Survey report (NCES, 2000) presents percent change for women administrative staff. Percent change for women administrators, however, does not address the issue of the gender gap--how the change in the number of women administrators affects their representation as compared to the number of men administrators. To present a picture of change in representation more comprehensively than the one presented by percent change, we examined

[2] The Carnegie Foundation released a new classification system in 2000. However, the 1997 NCES Institutional Characteristics Survey from which we obtained institutional characteristics used the 1994 Carnegie Classification system.

changes in the proportional representation of women administrators among all administrators. The change in proportional representation was calculated by subtracting the mean proportional representation of women administrators by race/ethnicity among total administrators in 1991 from the mean proportional representation of women administrators by race/ethnicity among total administrators in 1997. The change in the mean proportional representation of women administrators became the dependent variable for the trend analysis. For the predictive analysis, we combined the changes in the proportional representation for American Indian, Asian American, Black, and Hispanic women to create the dependent variable of change for women administrators of color.

The category of women administrators examined in this study consisted of full-time executive, administrative, and managerial staff, and excluded all other categories of staff: other professionals, technical and paraprofessional, clerical and secretarial, skilled crafts, service/maintenance, and part-time employees. According to the NCES criteria (Roey et al., 1998), the executive, administrative, and managerial staff category included positions where individuals exercised discretion, independent judgment, and directed the work of others. This category comprised senior-level positions such as presidents, vice presidents, and deans, as well as junior-level positions such as directors and associate and assistant deans and directors. Currently, the NCES data does not allow disaggregation into discrete categories of senior-level and junior-level administrative positions.

Independent Variables

We used six institutional characteristics (level, control, size, locale, race, and sex) to examine trends in the change in the proportional representation of women administrators by race/ethnicity from 1991 to 1997 (i.e., the dependent variable). In conducting the predictive analysis, we added two 1991 institutional characteristics (woman CEO and percentage of women faculty of color). The institutional characteristics were derived from the following sources.

1. Level (2-year, 4-year) - The 1996-97 NCES Institutional Characteristics data (NCES, 1999b)

2. Control (public, private) - The 1996-97 NCES Institutional Characteristics data (NCES, 1999b)

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3. Size (small-size, 3,000 or less students; medium-size, 3,001 to 10,000 students; large-size, more than 10,000 students) - The 1991-92 NCES Fall Enrollment data (NCES, 1999a)

4. Locale (urban, suburban, rural) - The 1996-97 NCES Institutional Characteristics data (NCES, 1999b)

5. Race (HBCU, Hispanic-serving, predominantly white) – White House Initiative on Educational Excellence for Hispanic Americans (1999) and the 1996-97 Institutional Characteristics data (NCES, 1999b).

6. Sex (women's, coeducational) - A report from the Office of Educational Research and Improvement on Women's Colleges (Harwarth, Maline, & DeBra, 1997).

7. Women faculty of color - The 1991 EEO-6 Survey (EEOC, 1991).

8. Woman CEO - We examined the names of CEOs in the 1991 Higher Education Directory (Healey Torregrosa, 1990) to determine the CEO's sex. The names of CEOs that were not clearly identifiable as either male or female were categorized after contacting the institution by Website, email, or phone.

Statistical Analyses

Frequencies were run to calculate the number, the mean proportional representation, and the change in mean proportional representation of women administrators by race/ethnicity. Frequencies were also run for each race/ethnicity by the institutional characteristics of level, control, size, locale, sex, and race. A blocked form of stepwise regression was then conducted to determine the relative impact of input and institutional characteristics on the outcome or dependent variable. The variables included in each block were designed following Astin's Input-Environment-Outcome (I-E-O) conceptual model (Astin, 1985, 1993). This conceptual model enters input variables in the first block to control for their potentially biasing influences on the dependent variable. In this study, the input variable was the mean proportional representation of women administrators of color in 1991. Entering this variable in the first block allowed us to statistically "equate" differences between institutions in their 1991 proportional representation of women administrators of color. Environmental variables, or institutional characteristics, were then entered in subsequent blocks to determine their relative influence, if any, on the dependent variable. The institutional characteristics entered in the second block included level, control,

size, locale, sex, and race. After controlling for the influence of these variables, the institutional characteristics of woman CEO and the percentage of women faculty of color--those variables that measure the elements of gatekeeping and critical mass addressed in the literature review--were entered into a final block.

The data used to create the variables entered into the final block, woman CEO and percentage of women faculty of color, were gathered from sources collected in the baseline year of 1991. The review of the literature on women administrators suggested that women CEOs, along with a critical mass of women faculty, may promote the cause of gender equity for women administrators. Using the logic of the I-E-O model and the conceptual framework of gatekeeping and critical mass, we hypothesized that the presence of a woman chief executive officer in 1991, and/or a high percentage of women faculty of color in 1991, would influence the change in an institution's proportional representation of women administrators of color from 1991 to 1997.

Results

The examination of the change in the proportional representation of women administrators of color was conducted by means of a trend analysis followed by a predictive analysis. The results of those analyses follow.

Trend Analyses

Previous research has shown that the mean proportional representation of women administrators overall increased 5.5 percentage points from 1991 to 1997, showing a clear narrowing of the gap between female and male administrators (Poplin Gosetti & Opp, 2000). However, the present analysis of women administrators by race/ethnicity shows that the increase was not uniform across all racial/ethnic groups. Although women administrators from all racial/ethnic groups experienced an increase in proportional representation, white women administrators by far had the largest increase (4.76 percentage points) (see Table 2). The four other racial/ethnic groups experienced increases well below 1 percentage point (American Indian 0.05 percentage points, Asian American 0.15 percentage points, Black 0.79 percentage points, and Hispanic 0.40 percentage points). Below, we present findings on the overall trends in the

proportional representation of women by race/ethnicity among higher education administrators, and those trends broken down by selected institutional characteristics.

Women Administrators by Race/Ethnicity Within Institutional Characteristics

A recent study of the change in the proportional representation of women administrators overall revealed that increases varied by institutional type (Poplin Gosetti & Opp, 2000). Variations by institutional type also emerged in the current study when an analysis was conducted for women administrators by race/ethnicity.

American Indian women administrators. Growth occurred in the proportional representation of American Indian women administrators overall (0.05 percentage points), and at most institutions except HSIs, large-size institutions, and rural institutions, where decreases occurred (-0.11, -0.03, and -0.78 percentage points respectively) (see Table 3). The apparent decrease in proportional representation at rural institutions may be explained in part by the underrepresentation of small tribal colleges in the sample.

Asian American women administrators. Growth occurred in the proportional representation of Asian American women administrators overall (0.15 percentage points), and at all types of institutions except HBCUs, where a 0.02 decrease occurred and at rural institutions, where the proportional representation did not change (see Table 4).

Black women administrators. Growth occurred in the proportional representation of Black women administrators overall (0.79 percentage points), and at all types of institutions (see Table 5). An examination of all of the institutional characteristics variables showed that Black women administrators experienced their greatest increase in proportional representation at HBCUs (4.96 percentage points).

Hispanic women administrators. Growth occurred in the proportional representation of Hispanic women administrators overall (0.40 percentage points) except at HBCUs, which experienced a 0.02 percentage point decrease (see Table 6). Hispanic-women administrators experienced their greatest increase in proportional representation at HSIs (3.26 percentage points).

White women administrators. Growth occurred in the proportional representation of white women administrators overall (4.76 percentage points), and at all types of institutions (see Table

7). White women administrators experienced an increase in proportional representation of over 5 percentage points at suburban institutions (6.61 percentage points), public institutions (5.83 percentage points), 2-year institutions (5.73 percentage points), and PWIs (5.05 percentage points).

Predictive Analysis

The results of the regression analysis predicting the change in the mean proportional representation of women administrators from 1991 to 1997 are presented in the order of the blocks in which they were entered: input, institutional characteristics, and climate variables related to gatekeeping and critical mass.

Input Variable

The proportional representation of women administrators of color in 1991 was entered in the first block of the regression model to statistically "equate" or control for beginning differences between institutions. This "pretest" variable was included to control for its influence, allowing for a less-biased estimate of the comparative influence of different institutional characteristics on the dependent variable. As expected, this "pretest" variable entered as a significant negative predictor of the change in proportional representation of women administrators of color ($p<.0001$) (see Table 8).

Institutional Characteristics

After controlling for the "pretest" variable, the institutional characteristics of level, control, size, locale, sex, and race were entered in the second block of the regression model. Four of these institutional characteristics variables entered as significant positive predictors of the change in the proportional representation of women administrators of color: HBCUs, HSIs, and urban institutions ($p<.0001$) as well as 2-year institutions ($p<.05$) (see Table 8). These types of institutions had significant increases in their proportional representation of women administrators of color.

Campus Climate Variables

Woman chief executive officer and percentage of women faculty of color variables were entered in the third block to test the importance of the climate variables of gatekeeping and

critical mass in predicting the change in the proportional representation of women administrators of color. The percentage of women faculty of color entered as significant positive predictor in the model ($p<.0001$) (see Table 8). Institutions with a high percentage of women faculty of color had significant increases in their proportional representation of women administrators of color.

Discussion

The proportional representation of women administrators in all five of the racial/ethnic groups increased between 1991 and 1997. White women administrators experienced by far the largest increase in proportional representation, followed by considerably smaller increases for Black, Hispanic, Asian American, and American Indian women administrators respectively. In addition, the change in the proportional representation of women administrators by race/ethnicity varied by institutional type, with some types showing much greater increases than others, and other types showing decreases. The fact that all groups of women administrators, regardless of race or ethnicity, experienced increases over this time period is an encouraging trend. However, white women clearly have experienced the greatest increases overall and at almost every institutional type except minority-serving institutions. Women administrators of color continue to be disproportionately underrepresented at most every institutional type except minority-serving institutions. Specifically, the trend analyses suggest that increases for Black and Hispanic women administrators have occurred primarily at institutions that serve their respective underrepresented group.

An analysis of the changes in proportional representation through purely descriptive means, while it illuminates specific racial/ethnic groups and institutional types that are experiencing more success than others, does not address the complex interrelationships between the institutional characteristics and their relative impact on those changes. The predictive analysis of the impact of institutional characteristics on the proportional representation of women administrators of color supports the contention that increases in the representation of these administrators may be explained by several institutional characteristics, including one related to campus climate. The discussion that follows focuses on the institutional characteristics that significantly influenced the change in proportional representation of women administrators.

The strongest influence on the change in proportional representation of women administrators was displayed by the variable percentage of women faculty of color (see Table 8). The literature and previous research suggested that campus climate variables, such as this critical mass variable, may positively influence such change. A study by Poplin Gosetti and Opp (2000) found that the gatekeeping variable of woman CEO and the critical mass variable of percentage of women faculty were positive predictors of the change in the proportional representation of women administrators overall. While there is a significant correlation between the gatekeeping and critical mass variables ($r=.048$, $p<.05$) in this study of women administrators of color, only critical mass had a significant influence on the positive change in their proportional representation. The literature suggests that a critical mass of women *administrators* may lead to positive growth in the number of women administrators (Ely, 1994; Kanter 1977). The findings from this study and a previous study of women administrators overall suggest that a critical mass of women *faculty members* influences positive change in the proportional representation of women administrators overall, while a critical mass of women *faculty members* of color influences positive change in the proportional representation of women administrators of color. While these findings support the connection between the presence of women in climate-changing, critical mass roles and positive change in the proportional representation of women administrators, the findings do not address the composition of that critical mass. Can the critical mass of women faulty consist primarily of assistant/associate professors (i.e., Kanter's notion of entry- or mid-level critical mass) or must it consist primarily of full professors (i.e., Ely's notion of a senior-level critical mass)?

The variables relating to minority-serving institutions (HBCUs and HSIs) were the second and third most powerful predictors of change in proportional representation of women administrators of color (see Table 8). One explanation for the significance of these variables could be their strong relationship to the women faculty of color variable, the most significant predictor of positive change. In our sample, a significant correlation exists between the percentage of women faculty of color and both HBCUs ($r= .66$, $p<.0001$) and HSIs ($r=.18$, $p<.0001$). However, even after controlling for the effect of the percentage of women faculty of color, the two minority-serving institutions remain as powerful predictors of positive change in the proportional representation of women administrators of color. Perceptions of campus climate

at these institutional types may provide one explanation for this predictive influence. Minority-serving institutions have been characterized as "a participatory ethos, an inclusive environment, an expectation of success, nonpunitive remediation, positive role models, and a sense of historical affirmation" such as that found at an HBCU (Harvey & Williams, 1996, p. 236). This climate of participation and inclusivity may be reflected in hiring and promotion policies and practices that are supportive for women administrators and may ameliorate many of the barriers that are characteristic of a "chilly climate" for administrators of color at PWIs. Black and Hispanic women, therefore, may be more likely to apply for administrative positions at these minority-serving institutions because they perceive the campus gender and racial climate to be supportive, therefore leading to increases in their proportional representation at those institutions.

The fourth most powerful predictor of change in the proportional representation of women administrators of color was the variable urban institution (see Table 8). The variable of urban institution not only showed the greatest increase in the proportional representation of Asian American, Black, and Hispanic women administrators among all three locales, it also had a significant positive impact on the change in the proportional representation of women administrators of color overall. While literature exists on the relationship between urban institutions and minority representation, our knowledge of the relationship between urban institutions and the representation of women is limited. The literature on minority representation suggests that urban institutions, particularly 2-year institutions, are not only committed to access, affordability, and opportunity but also to reflecting "in their faculty and administrations the demographic diversity of their student constituencies" (Muller, 1994, p. 57). It is possible that urban colleges and universities have a greater commitment to promoting the cause of racial and gender equity, than do their suburban or rural counterparts.

The final predictor of the change in the proportional representation of women administrators of color was the 2-year institution variable (see Table 8). All racial/ethnic groups experienced an increase in their proportional representation at 2-year institutions. Among all institutional characteristics, some of the greatest increases for American Indian (0.11), Asian American (0.21), and Hispanic (0.52) women administrators occurred at 2-year institutions. While some would argue that 2-year institutions have not hired "women and minorities into top leadership positions in proportion to their representation as faculty and students" (Twombly, 1995, p. 68),

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these institutions still emerged as a predictor of positive change. One possible explanation is that 2-year institutions, due to their open access nature, have developed a campus climate that supports diversity and inclusivity (Tedrow & Rhoads, 1998). Such a campus climate could lead to hiring practices that promote equity and/or could be seen as attractive to women of color seeking administrative positions. Another explanation may be that women are hired more frequently for leadership positions in low-status rather than high-status institutions. Some in academe would argue that 2-year institutions are perceived as low-status institutions and, therefore, presidencies and other administrative positions may be more available to women at 2-year than at 4-year institutions (see, for example, DiCroce, 1995).

Policy Implications

The results of this study indicate that the proportional representation of women administrators of color has increased in the American system of higher education. However, the increase has not been uniform across all types of institutions. Minority-serving institutions, in particular, outpaced the change in the proportional representation for Hispanic and Black women that was experienced at most other institutional types. This finding suggests that policymakers need to consider types, other than just level and control when examining trends in the proportional representation of women administrators of color. To better inform policy making at both the state and institutional level, trend data must be reported not only for the institutional characteristics of level and control, but also for characteristics such as institutional locale and race.

The relationship between the percentage of women faculty of color and its positive impact on the change in proportional representation of women administrators of color suggests that institutions of higher education need to make a continuing effort to increase the critical mass of women faculty of color. The number of faculty vacancies that appear each year in publications such as The Chronicle of Higher Education and Black Issues in Higher Education suggest that this effort could produce a demonstrable increase. The graying of America's faculty has lead experts to predict a surge of retirements in this decade (Magner, 2000), a phenomenon that will clearly provide many institutions with the opportunity to diversify their faculty ranks. Senior academic administrators and institutional governing boards play a pivotal role in the

development of strategic plans and in the creation of hiring policies and practices that guide the selection of faculty members. Organizations such as the American Council on Education and the Association of Governing Boards can take an active role in the education of presidents, other senior academic administrators, and board members through workshops and publications that address the significant role that a diverse faculty can play in the development of gender equitable environments.

While the NCES data help identify factors that contribute to some institutional types experiencing greater success than others at increasing their proportional representation of women, information about specific institutional contexts is needed. Policy makers must seek out data that provide information specifically on institutional practices that are purposefully and successfully thawing the chilly climate for women administrators of color. For example, case studies can be conducted with minority-serving institutions, 2-year institutions, and urban institutions to examine why and how they have a positive influence on the change in the proportional representation of women administrators of color. Similar case studies can be conducted at institutions with high percentages of women faculty of color. These studies would provide information on the specific steps other institutions might take to develop policies and practices that help create more supportive campus climates for all women.

Suggestions for Further Research

This study sought to move the analysis of the status of women administrators in higher education beyond the frequently reported institutional characteristics of level and control. The disaggregation of national data sets by additional institutional characteristics and by race/ethnicity can provide a more comprehensive picture of the changing and complex patterns in the proportional representation of women administrators of color. However, while many interesting trends emerged through this disaggregation, the findings raised several questions that can only be answered through further research.

Our study suggests that campus climate factors such as the critical mass of women faculty of color influence the trends in the proportional representation of women administrators of color. Other factors, however, may contribute to changes in these trends. For instance, research on women administrators overall shows that the proportional representation of women in

administration varies by position and level (i.e., women are found more frequently in CSAO than in CAO positions). The category of executive, administrative, and managerial staff on the NCES Fall Staff Survey does not differentiate by position or level. Within this diverse administrative category, trends among senior-level administrators such as presidents, vice-presidents, and deans, cannot be disaggregated from trends among junior-level administrators such as directors or assistant deans. Given that women are often over represented in low-level administrative positions, particularly women of color (Rai & Critzer, 2000), we suspect that the increase in proportional representation of women administrators of color may be greater for junior- than for senior-level administrators. The data, however, cannot be disaggregated to document this empirically.

Another factor that may influence the change in the proportional representation of women administrators of color is the gender composition of institutions' governing boards. The literature suggests that diversity on governing boards can be reflected in institutional policies and hiring practices (Phelps & Taber, 1994). We suspect that the gender and racial composition of governing boards has an influence on the change in the proportional representation of women administrators of color. Although characteristics of board members are available in the aggregate, institutional level data on board members categorized by sex and race are not readily available to the research community.

Conclusions

This study sheds new light on the status of women administrators of color in higher education. The findings of this study suggest that in order to develop policies and practices that promote the cause of gender and racial equity in all institutions of higher education, we must move beyond the use of the frequently-used categories of level and control, to the use of categories more closely connected to campus climates and cultures such as gender composition, racial/ethnic composition, and urbanicity. We must also move beyond the simple descriptive analyses of data typically used with national data sets to inferential analyses that allow causal inferences upon which to base informed policy decisions and practice. Recognizing that the increases in the representation of women administrators of color may be due, in part, to the presence of a critical mass of women faculty of color, opens the door not only to new ways of

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informing policy development and practice, but also to future research that can uncover new understandings of gender and race equitable practices.

Table 1

Representation of Institutional Types within the Sample

Institutional Characteristics	IPEDS Population	Sample	% of Population
Overall	2,813	2,292	81.5
Level			
2-year	1,411	1,030	73.0
4-year	1,402	1,262	90.0
Control			
Public	1,481	1,324	89.4
Private	1,332	968	72.7
Size			
Small	1,629	1,223	75.1
Medium	754	697	92.4
Large	392	370	94.4
Locale			
Urban	1,936	1,574	81.3
Suburban	631	559	88.6
Rural	180	153	85.0
Single-sex/Coeducational			
Women's	75	66	88.0
Coeducational	2,725	2,226	81.7
Minority-serving			
HBCUs	95	76	80.0
Hispanic-serving	115	106	92.2
Tribal	27	9	33.3
PWIs	2,576	2,101	81.6

Table 2

Mean Proportional Representation of Women Administrators by Race Among All Administrators in Higher Education, 1991 and 1997

	1991		1997		1991-1997 Change in Mean Proportional Representation
	N	Mean Prop. Rep.	N	Mean Prop. Rep.	
American Indian	195	0.30	240	0.35	0.05
Asian	713	0.37	878	0.52	0.15
Black	5,043	3.63	5,534	4.42	0.79
Hispanic	1,077	0.78	1,605	1.18	0.40
White	37,557	30.53	43,936	35.29	4.76
Total	44,585	35.61	52,193	41.76	6.15

Table 3

Number and Mean Proportional Representation of American Indian Women Administrators in Higher Education, 1991 and 1997.

Institutional Characteristics	1991		1997		1991 to 1997
	N	Mean Prop. Rep.	N	Mean Prop. Rep.	Mean Difference
Level					
2-year	55	0.45	87	0.56	0.11
4-year	140	0.17	153	0.17	0.00
Control					
Public	156	0.42	190	0.45	0.03
Private	39	0.13	50	0.21	0.08
Size					
Small	48	0.37	61	0.39	0.02
Medium	48	0.18	74	0.32	0.14
Large	99	0.29	105	0.26	-0.03
Locale					
Rural	24	2.15	22	1.37	-0.78
Urban	147	0.19	173	0.26	0.07
Suburban	24	0.10	45	0.30	0.20
Sex					
Women's	2	0.05	2	0.09	0.04
Coeducational	193	0.30	238	0.35	0.05
Race					
HBCU	1	0.02	2	0.06	0.04
HSI	14	0.34	10	0.23	-0.11
PWI	158	0.15	207	0.25	0.10

Table 4

Number and Mean Proportional Representation of Asian American Women Administrators in Higher Education, 1991 and 1997.

Institutional Characteristics	1991		1997		1991 to 1997
	N	Mean Prop. Rep.	N	Mean Prop. Rep.	Mean Difference
Level					
2-year	105	0.39	143	0.60	0.21
4-year	608	0.36	735	0.45	0.09
Control					
Public	406	0.38	483	0.54	0.16
Private	307	0.37	395	0.48	0.11
Size					
Small	81	0.25	127	0.30	0.05
Medium	208	0.42	277	0.71	0.29
Large	424	0.70	474	0.87	0.17
Locale					
Rural	3	0.10	4	0.10	0.00
Urban	681	0.50	827	0.69	0.19
Suburban	27	0.09	47	0.16	0.07
Sex					
Women's	17	0.59	19	0.60	0.01
Coeducational	695	0.37	859	0.52	0.15
Race					
HBCU	12	0.09	7	0.07	-0.02
HSI	67	0.74	44	0.92	0.18
PWI	633	0.35	826	0.51	0.16

Table 5

Number and Mean Proportional Representation of Black Women Administrators in Higher Education, 1991 and 1997.

Institutional Characteristics	1991		1997		1991 to 1997
	N	Mean Prop. Rep.	N	Mean Prop. Rep.	Mean Difference
Level					
2-year	804	3.43	1,034	4.23	0.80
4-year	4,239	3.79	4,500	4.58	0.79
Control					
Public	2,678	3.97	3,387	4.89	0.92
Private	2,365	3.17	2,147	3.78	0.61
Size					
Small	879	3.09	1,196	3.81	0.72
Medium	2,136	4.33	2,047	5.50	1.17
Large	2,027	4.06	2,291	4.47	0.41
Locale					
Rural	105	2.17	137	2.67	0.50
Urban	4,599	4.33	5,006	5.24	0.91
Suburban	333	2.09	385	2.64	0.55
Sex					
Women's	137	6.43	1,411	7.31	0.88
Coeducational	4,887	3.56	5,393	4.35	0.79
Race					
HBCU	1,458	35.3	1,271	40.26	4.96
HSI	224	4.60	287	6.17	1.57
PWI	3,361	2.45	3,976	3.06	0.61

Table 6

Number and Mean Proportional Representation of Hispanic Women Administrators in Higher Education, 1991 and 1997.

Institutional Characteristics	1991		1997		1991 to 1997 Mean Difference
	N	Mean Prop. Rep.	N	Mean Prop. Rep.	
Level					
2-year	277	1.08	406	1.60	0.52
4-year	800	0.53	1,199	0.84	0.31
Control					
Public	671	1.04	977	1.49	0.45
Private	406	0.41	628	0.75	0.34
Size					
Small	125	0.44	244	0.80	0.36
Medium	273	1.02	402	1.39	0.37
Large	679	1.43	959	2.05	0.62
Locale					
Rural	9	0.20	16	0.36	0.16
Urban	1,014	0.98	1,507	1.47	0.49
Suburban	54	0.37	81	0.59	0.22
Sex					
Women's	14	0.52	21	1.07	0.55
Coeducational	1,058	0.78	1,584	1.18	0.40
Race					
HBCU	6	0.10	3	0.08	-0.02
HSI	378	6.20	627	9.46	3.26
PWI	693	0.53	974	0.80	0.27

Table 7

Number and Mean Proportional Representation of White Women Administrators in Higher Education, 1991 and 1997.

Institutional Characteristics	1991		1997		1991 to 1997
	N	Mean Prop. Rep.	N	Mean Prop. Rep.	Mean Difference
Level					
2-year	5,978	30.14	7,828	35.87	5.73
4-year	31,579	30.85	36,108	34.82	3.97
Control					
Public	20,094	26.96	23,979	32.79	5.83
Private	17,463	35.42	19,957	38.71	3.29
Size					
Small	8,167	31.89	10,229	36.66	4.77
Medium	11,565	29.39	13,311	34.19	4.80
Large	17,816	28.19	20,395	32.92	4.73
Locale					
Rural	910	26.47	1,160	31.41	4.94
Urban	31,990	32.42	37,126	36.50	4.08
Suburban	4,565	26.28	5,525	32.89	6.61
Sex					
Women's	935	65.48	1,039	66.88	1.40
Coeducational	36,362	29.69	42,897	34.53	4.84
Race					
HBCU	91	2.93	80	4.02	1.09
HSI	1,328	24.64	1,374	26.44	1.80
PWI	36,132	31.93	42,475	36.98	5.05

Table 8

Stepwise Regression Analysis for Variables Predicting the Change in the Proportional Representation of Women Administrators of Color

	Variable	Zero *r*	Step Beta	Final Step	
				Beta	*F* Ratio
Step 1	Percent women administrators of color, 1991	-.18	-.18	-.53**	79.4
Step 2	Historically black colleges and universities	.09	.30	.25**	117.8
Step 3	Hispanic serving institutions	.11	.19	.15**	110.0
Step 4	Urban institutions	.06	.10	.09**	89.6
Step 5	2-year institutions	.04	.08	.05*	75.1
Step 6	Percent women faculty of color, 1991	.14	.27	.27**	82.5

Note. R^2=.14 (N=2,291, p<.01).

* p<.05. **p<.0001.

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